TELEPHONY BASED REMOTE LOCATION MONITORING

BACKGROUND OF THE INVENTION

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1. Technical Field:

[0001] The present invention relates in general to improved telecommunications and in particular to a method for telephony based remote location monitoring. Still more particularly, the present invention relates to allocating a listen only channel from a caller telephony device to a remote location telephony device for the caller to monitor the audible occurrences at that remote location.

2. Description of the Related Art:

[0002] A telephone carrier receives call requests, allocates systems resources to those call requests, and establishes a connection with a requested location. In a typical call, sufficient resources are allocated to establish bidirectional conversation, also known as full duplex bandwidth allocation. Other allocations of system resources, however, may be implemented that use less system resources and thus are often less expensive. For example, current telephones

may include a "push-to-talk" feature that when selected directs the telephone carrier to only

allocate system resources enabling the selector to talk and the recipient to listen, also known as

half-duplex bandwidth allocation. When a "push-to-talk" feature is implemented,

communication seems to operate in real time, however, typically the communication actually

5   operates in near-real time with approximately a .25 to 2.0 second time lapse in the

communication.

[0003]   Teleconferencing systems are an example of another system that may allocate

system resources for calls received and placed in a private telephone network. Teleconferencing

systems may restrict some callers to listen only and allow other callers to listen and talk with full

10   duplex allocation. In these systems, a participant calls into an intermediary teleconferencing

system that handles the conference call within a private telephone network. The intermediary

may reallocate resources during the conference call. For example, investors may call in to a

particular number to listen to a board meeting. Investors may be restricted to listen only unless

they are given time to speak by the board, in which case the intermediary system would allocate

15   resources for the investor to talk.

[0004]   While teleconferencing systems can control half duplex and full duplex resource

allocation for a call, these systems are limited in application and require an intermediary system

controlling communications between those participating in the conference, rather than a direct

connection. Further, the teleconferencing system decides what resources to allocate to a caller,

20   rather than allowing the caller to decide what resources are needed for the call.

[0005]   Therefore, it would be advantageous to place callers in full control of the type of

resource allocation needed for a call. In particular, it would be advantageous to place callers in

control of placing a "listen only" call that allows the caller to request resource allocation that will

allow the caller to listen in on a remote location via a telephone.

SUMMARY OF THE INVENTION

[0006]   The invention generally provides an improved telecommunication system for

enabling a caller to request the type of resources needed for a call. In particular, the invention

5   provides a method, system, and program for allocating resources for telephony based remote

location monitoring.

[0007]   According to one aspect of the present invention, a caller requests at a caller

telephony device to place a listen only call to a particular remote location telephony device. The

10   caller may request the listen only call, for example, by depressing a button specified at the caller

telephony device for placing listen only calls or by selecting a remote location device or group of

devices from a database of listen only devices.

[0008]   A telephone network receives the caller request to listen only to a remote

15   location telephony device. The telephone network allocates a listen only channel between the

caller telephony device and the remote location telephony device. The telephone network

activates a microphone at the remote location telephony device via the listen only channel. Then,

audio detected at the microphone is streamed via the listen only channel to the caller telephony

device, such that the telephone network enables a caller to monitor a remote location through the

20   remote location telephony device with minimized allocation of telephone network resources.

[0009]   Additionally, the telephone network may request authorization for the caller to listen only at the remote location telephony device. The remote location telephony device preferably includes an authorized caller database. If the caller identity matches one of the entries in the authorized caller database, then the listen only call is authorized by the remote location telephony device. Responsive to the remote location telephony device authorizing a listen only communication, the microphone at the remote location telephony device is activated and the audio detected at the microphone is streamed to the caller telephony device.

[0010]   Further, a caller may request that the telephone network access multiple remote telephony location devices via listen only channels. A caller may select to listen to a group of remote location telephony devices via a rotating listen only channel or through simultaneous listening channels allocated to each of the remote location telephony devices.

[0011]   According to another aspect of the present invention, a caller requests at a caller telephony device to place a call for a remote location callee to listen only to the caller location. The telephone network receives the caller request for the remote location telephony device to listen only to the caller telephony device. The telephone network queries the remote location telephony device for authorization to listen only to the caller telephony device. If the authorization is received, then the telephone network allocates a listen only channel between the remote location telephony device and the caller telephony device. A microphone at the caller telephony device is activated and audio detected at the microphone is streamed via the listen only

channel to the remote location telephony device.

[0012]   A caller may also request that the telephone network change the listen only

channel to a talk only channel. In this case, the telephone network deallocates the listen only

5   channel and allocates a talk only channel between the caller telephony device and the remote

location telephony device.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013]   The novel features believed characteristic of the invention are set forth in the

appended claims. The invention itself however, as well as a preferred mode of use, further

5   objects and advantages thereof, will best be understood by reference to the following detailed

description of an illustrative embodiment when read in conjunction with the accompanying

drawings, wherein:

[0014]   **Figure 1** is a block diagram depicting a system through which the present

10   method, system, and program may be implemented;

[0015]   **Figure 2** is a block diagram depicting a distributed telephony system

environment in accordance with the method, system, and program of the present invention;

15   [0016]   **Figure 3** is a block diagram depicting a caller telephone interface in accordance

with the method, system, and program of the present invention;

[0017]   **Figure 4** is a block diagram depicting a remote location telephone interface in

accordance with the method, system, and program of the present invention;

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[0018]   **Figure 5** is a block diagram depicting the internal functional components of a

caller telephony device in accordance with the method, system, and program of the present

invention;

[0019]   Figure 6 is a block diagram depicting the internal functional components of a

5   remote location telephony device in accordance with the method, system, and program of the

present invention;

[0020]   Figure 7 is an illustrative representation of a group listen only call with a single

channel rotating among group members in accordance with the method, system, and program of

10   the present invention;

[0021]   Figure 8 is an illustrative representation of a group listen only call with a

separate listen only channel for each group member in accordance with the method, system, and

program of the present invention;

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[0022]   Figure 9 is a high level logic flowchart depicting a process and program for

controlling a caller telephone in accordance with the method, system, and program of the present

invention;

20   [0023]   Figure 10 is a high level logic flowchart depicting a process and program for

controlling a telephone network enabled to handle listen only calls;

[0024]   **Figure 11** is a high level logic flowchart depicting a process and program for

controlling a remote location telephone.

5   [0025]   **Figure 12** is a high level logic flowchart of a process and program for initiating

a callee listen only call in accordance with the method, system, and program of the present

invention; and

            [0026]   **Figure 13** is a high level logic flowchart of a process and program for a

10   telephone network controlling a listen only call where a callee listens only to a caller who

initiates the listen only call in accordance with the method, system, and program of the present

invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0027]   Referring now to the drawings and in particular to **Figure 1**, there is depicted

one embodiment of a system through which the present method, system, and program may be

5   implemented. The present invention may be executed in a variety of systems, including a variety

of computing systems and electronic devices. Computer system **100** may be implemented as a

telephone device or may be implemented within a telephone network. It will also be understood

that the present invention may be implemented in standard telephony devices not enhanced by

computing functions and in a standard telephone network not enhanced by computing systems.

10   [0028]   Computer system **100** includes a bus **122** or other communication device for

communicating information within computer system **100**, and at least one processing device such

as processor **112**, coupled to bus **122** for processing information. Bus **122** preferably includes

low-latency and higher latency paths that are connected by bridges and adapters and controlled

within computer system **100** by multiple bus controllers. When implemented as a server system,

15   computer system **100** typically includes multiple processors designed to improve network

servicing power.

[0029]   Processor **112** may be a general-purpose processor such as IBM's PowerPC™

processor that, during normal operation, processes data under the control of operating system and

application software accessible from a dynamic storage device such as random access memory

20   (RAM) **114** and a static storage device such as Read Only Memory (ROM) **116**. The operating

system preferably provides a graphical user interface (GUI) to the user. In a preferred

embodiment, application software contains machine executable instructions that when executed

on processor **112** carry out the operations depicted in the flowcharts of **Figures 9, 10, 11, 12, 13**

and others described herein. Alternatively, the steps of the present invention might be performed

by specific hardware components that contain hardwired logic for performing the steps, or by any

5   combination of programmed computer components and custom hardware components.

[0030]   The present invention may be provided as a computer program product, included

on a machine-readable medium having stored thereon the machine executable instructions used

to program computer system **100** to perform a process according to the present invention. The

term "machine-readable medium" as used herein includes any medium that participates in

10   providing instructions to processor **112** or other components of computer system **100** for

execution. Such a medium may take many forms including, but not limited to, non-volatile

media, volatile media, and transmission media. Common forms of non-volatile media include,

for example, a floppy disk, a flexible disk, a hard disk, magnetic tape or any other magnetic

medium, a compact disc ROM (CD-ROM) or any other optical medium, punch cards or any

15   other physical medium with patterns of holes, a programmable ROM (PROM), an erasable

PROM (EPROM), electrically EPROM (EEPROM), a flash memory, any other memory chip or

cartridge, or any other medium from which computer system **100** can read and which is suitable

for storing instructions. In the present embodiment, an example of a non-volatile medium is

mass storage device **118** which as depicted is an internal component of computer system **100**, but

20   will be understood to also be provided by an external device. Volatile media include dynamic

memory such as RAM **114**. Transmission media include coaxial cables, copper wire or fiber

optics, including the wires that comprise bus **122**. Transmission media can also take the form of

acoustic or light waves, such as those generated during radio frequency or infrared data

communications.

[0031] Moreover, the present invention may be downloaded as a computer program

5   product, wherein the program instructions may be transferred from a remote computer such as a

server **140** to requesting computer system **100** by way of data signals embodied in a carrier wave

or other propagation medium via a network link to a network, such as Internet **138,** to a

communications interface **132** coupled to bus **122**. In particular, the network link may provide

wired and/or wireless network communications to one or more networks. Internet **138** may refer

10   to the worldwide collection of networks and gateways that use a particular protocol, such as

Transmission Control Protocol (TCP) and Internet Protocol (IP), to communicate with one

another.

[0032] Advantageously, in addition to communication via Internet **138**, computer

system **100** is enabled to communicate with other telephony devices, such as telephony device

15   **144**, via a telephone network **142**. Telephone network **142** includes the public switched

telephone system (PSTN), cellular networks, and other networks, such as the Internet, which

continue to be incorporated into the telephone system.

[0033] Internet **138** and telephone network **142** both use electrical, electromagnetic, or

optical signals that carry digital data streams. The signals through Internet **138** and telephone

20   network **142** and the signals through communication interface **132**, which carry the digital data to

and from computer system **100**, are exemplary forms of carrier waves transporting the

information.

[0034]   When implemented as a server system, computer system **100** typically includes multiple communication interfaces accessible via multiple peripheral component interconnect (PCI) bus bridges connected to an input/output controller. In this manner, computer system **100**

5   allows connections to multiple network computers.

[0035]   When implemented as a telephone device, computer system **100** typically includes multiple peripheral components that facilitate communication. These peripheral components are connected to multiple controllers, adapters, and expansion slots coupled to one of the multiple levels of bus **122**. For example, a speaker **128** is connectively enabled on bus **122**

10   for controlling audio output. A microphone **130** is connectively enabled on bus **122** for controlling audio input. A display device **124** is also connectively enabled on bus **122** for providing visual, tactile or other graphical representation formats. A keypad **126** is connectively enabled on bus **122** as an interface for user inputs to computer system **100**. In alternate embodiments of the present invention, additional input and output peripheral components may be

15   added.

[0036]   Those of ordinary skill in the art will appreciate that the hardware depicted in **Figure 1** may vary. Furthermore, those of ordinary skill in the art will appreciate that the depicted example is not meant to imply architectural limitations with respect to the present invention. In particular, the telephone devices described throughout may be implemented with

20   only portions of the components described for computer system **100**.

[0037]   With reference now to **Figure 2**, there is depicted a block diagram of a

distributed telephone system environment in accordance with the method, system, and program

of the present invention. As illustrated, a caller telephone **200** and a remote location telephone

206 are connected via a telephone network **142**. In particular, a channel allocation controller **204**

5   receives call requests from caller telephone **202** and allocates telephone network resources to

caller telephone **202**. Channel allocation controller **204** may include a series of switches and

hardwired circuits in addition to server systems and other computing devices.

[0038]   In a traditional telephone call request, a user dials a number at caller telephone

202. Telephone network **142** receives the call request and channel allocation controller **204**

10   attempts to connect with the destination device, such as remote location telephone **206**. In a

traditional call, a ring tone is transmitted to alert a callee to a call request. If remote location

telephone **206** is answered, then a full duplex channel is allocated from communication between

caller telephone **202** and remote location telephone **206**.

[0039]   In lieu of a traditional telephone request for full duplex communication,

15   however, in the present invention a user at caller telephone **202** may press a button, such as a

"push-to-talk" button, or select an option to "listen only". In this case, channel allocation

controller **204** queries remote location telephone **206** with the identity of the user for a "listen

only" call. In querying remote location telephone **206** for the "listen only" call, channel

allocation controller **204** preferably omits the ring transmission, such that those at the remote

20   location are not required to take overt action to acknowledge the call. The callee may be alerted

that a listen only call is activated through an audible signal, a flashing LED indicator, a vibrate

indication, or a graphical or text message on the callee's display.

[0040] A user may filter which callers can activate a listen only call at remote location telephone **206**. In particular, remote location telephone **206** preferably includes a database of authorized "listen only" callers. The identity of the user is compared with the database of

5   authorized "listen only" callers. If there is a match, remote location telephone **206** authorizes the call. When the call is authorized, channel allocation controller **204** transmits a signal that activates a microphone on remote location telephone **206**. Additionally, channel allocation controller **204** allocates system resources of a listen only half duplex channel **210**. Listen only half duplex channel **210** opens a channel for caller telephone **202** to listen to the audio picked up

10   by remote location telephone **206**. Advantageously, by allowing a caller to specify the type of features needed for a call, only those resources needed for the call are allocated. In particular, the "listen only" option may be advantageous in situations where, for example, a parent, guardian, employer, or other person would like to monitor what is happening at a remote location.

[0041] In addition to initiating a listen only call where the caller listens through remote

15   location telephone **206**, the caller may initiate a listen only call where the caller requests that the callee listen only to the caller telephone. Channel allocation controller **204** would first prompt the callee to authorize the listen only call and would then open a half duplex channel for remote location telephone **206** to listen to caller telephone **202**.

[0042] Further, in lieu of a traditional telephone request, a user at caller telephone **202**

20   may press a button or select an option to "talk only". In this case, channel allocation controller **204** will allocate talk only half duplex channel **212** where remote location telephone **206** can only

listen and caller telephone **202** can talk.

[0043]   It is important to note that while the present embodiment is described for

purposes of illustration with a caller telephone **202** initiating a listen only call to a remote

location telephone **206**, a single telephony device may function as caller telephone **202** when

5   initiating a "listen only" call and may function as remote location telephone **206** when receiving a

"listen only" call request.

[0044]   Referring now to **Figure 3**, there is depicted a block diagram of a caller

telephone interface in accordance with the method, system, and program of the present invention.

10   As illustrated, a caller telephone interface **300** includes a speaker **301** for projecting audio, a

display device **302** for interfacing with the user, a keypad **306** for input of telephone numbers and

other information to the caller telephone, and a microphone **310** for capturing audio.

[0045]   Additionally, caller telephone interface **300** includes a "to listen" button **304** and

a "to talk" button **306**. Responsive to a user pressing "to listen" button **304**, a listen only channel

15   request is initiated and maintained while the button is pressed. The user may specify whether the

listen only channel should allow the caller to listen to the remote location or the remote location

to listen to the caller. Responsive to a user pressing "to talk" button **306**, a talk only channel

request is initiated and maintained while the button is pressed.

[0046]   It will be understood that "to listen" button **304** and "to talk" button **306** are

20   examples of one method for implementing the "listen only" and "talk only" functions. In an

alternate embodiment of the invention, the "listen only" and "talk only" functions may be

implemented through a toggle switch. Further, a user may select a displayed option on display

device **302** to initiate either the "listen only" or "talk only" function. Moreover, a particular key

within keypad **306** may be designated as a quick-connect key that when pressed once enables a

fast connection to a listen only channel and when pressed twice enables a fast connection to a

5   talk only channel.

[0047]   With reference now to **Figure 4**, there is illustrated a block diagram of a remote

location telephone interface in accordance with the method, system, and program of the present

invention. As depicted, remote location telephone interface **400** includes a speaker **401** for

10   projecting audio, a display device **402** for interfacing with the user, a keypad **406** for input of

telephone numbers and other information to the remote location telephone, and a microphone

410 for capturing audio. While in the present embodiment microphone **410** is illustrated as an

internal component of remote location telephone interface **400**, for purposes of this invention,

microphone **410** may be an external component. Further, microphone **410** may be a stand alone

15   unit connected to remote location telephone interface **410**. Additionally, multiple microphones

may capture audio that is then combined at remote location telephone interface **400**.

[0048]   In addition, remote location telephone **400** also includes a listen setting button

406. A user preferably presses listen setting button **406** to access a list of authorized listeners

viewable via display device **402**. Additionally, when a user receives a phone call at remote

20   location telephone interface **400** or places a phone call from remote location telephone interface

400, the user may press button **406** and quickly select to add the caller or callee identity to a list

of authorized listeners. It will be understood that alternate interfaces may be used to implement a listen setting feature on a remote location telephone.

[0049]   Further, remote location telephone **400** also includes a listen indicator **404**. Listen indicator **404** may be a light emitting diode or other indicator that is turned on when a

5   listen only channel is accessing the remote location telephone.

[0050]   It is important to note that while in the present embodiment caller telephone interface **300** and remote location telephone interface **400** are described for purposes of illustration as different interfaces on different telephony devices, a single telephony device interface may incorporate the features of both described interfaces.

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[0051]   Referring now to **Figure 5**, there is depicted a block diagram of the internal functional components of a caller telephony device in accordance with the method, system, and program of the present invention. As illustrated, a caller telephone includes caller telephone components **500**. First, caller telephone components **500** include a half duplex controller **504**

15   that detects when a "listen only" or "talk only" selection is made, whether a group call request is selected, and requests that a call be placed with a "listen only" or "talk only" channel to the selected recipient(s).

[0052]   Additionally, caller telephone components **500** includes a phone list database **506** that stores names and telephone numbers that are easily retrievable and dialed. In particular,

20   as illustrated, a user may store particular numbers as push to listen numbers that when selected from the list, are automatically dialed as "listen only". Further, when specifying "listen only"

numbers, groups of remote telephones may be selected. The group may include a single telephone number that accesses multiple telephones. Alternatively, the group may include multiple telephone numbers. Further, the group specification may designate a single "listen only" channel that rotates from member to member or a "listen only" channel for each group

5   member. In the example, depicted for phone list database **506**, group 1 is designating as a rotating channel group where the listen only channel rotates to the next group member every twenty seconds. In addition, in the example, group 2 is designated as an all channel group where a separate listen only channel is initiated for each group member such that listening to all channels may occur simultaneously. It will be understood that in addition to selecting groups of

10   remote telephones to which the caller can listen only, the caller may also select groups of remote telephones that listen only to the caller location.

[0053]   Further, caller telephone components **500** include a call controller **508** that controls the other calling functions of the caller telephone. It will be understood that in addition to the components illustrated, additional components that are implemented in a telephony device

15   may be included.

[0054]   With reference now to **Figure 6**, there is illustrated a block diagram of the internal functional components of a remote location telephony device in accordance with the method, system, and program of the present invention. As depicted, a remote location telephone

20   includes remote location telephone components **600**.

[0055]   Remote location telephone components **600** include a listen only controller **602**

that controls the listen only functions of the remote locations telephone. In particular, listen only

controller **602** controls the listen only interface with a user at the remote location telephone and

controls the authorization of listen only requests.

[0056] In addition, remote location telephone components **600** include an authorized

5   listener database **604** that stores the identities of authorized listeners. Identities may be stored as

a telephone number, a name, a voice sample, or other identifier.

[0057] Further, remote location telephone components **600** include a microphone

activation controller **608**. Microphone activation controller **608** activates the microphone at the

remote location telephone in response to receiving a request from the telephone network for a

10   listen only call. Further, microphone activation controller **608** disables the microphone at the

remote location telephone in response to receiving a termination signal for the listen only call

from the telephone network. Microphone activation controller **608** may include circuitry or

microcode that can be activated by the telephone network.

[0058] It is important to note that while the present embodiment is described for

15   purposes of illustration with caller telephone components **500** and remote location telephone

components **600** as independent sets of telephony components, a single telephony device may

incorporate both sets of components, such that a single telephony device may both place "listen

only" calls and handle requests for "listen only" calls.

20   [0059] Referring now to **Figure 7**, there is depicted an illustrative representation of a

group listen only call with a single channel rotating among group members in accordance with

the method, system, and program of the present invention. As depicted, a caller has selected "group 1" from the phone list database and the "listen only" channel at caller telephone **702**. Channel allocation controller **204** receives the request and allocates a listen only channel to remote location telephone **706**, as illustrated as reference numeral **712**. Then, after opening the

5   channel illustrated at reference numeral **712** for a set period of time, such as twenty seconds, the channel is closed and a new "listen only" channel is opened with remote location telephone **708**. Thus, the "listen only" channel rotates from remote location telephone **706** to **708** to **710** and then back to **706**. In the example, each of remote location telephones **706, 708,** and **710** are accessible via the same telephone number. Thus, a parent may call "group 1" which includes the

10   group of remote telephones within the home and rotate listening at each telephone, using minimized resources by rotating a single "listen only" channel from telephone to telephone.

        [0060]   As an additional advantage, while listening to one remote location telephone, such as remote location telephone **706**, a caller may select to initiate a "talk only" channel with another telephone in the group, such as remote location telephone **710**. Thus, a caller may

15   monitor a location by scanning the noise at a group of telephones and may also talk through one of the remote location phones if requested.

        [0061]   With reference now to **Figure 8**, there is depicted an illustrative representation of a group listen only call with a separate listen only channel for each group member in

20   accordance with the method, system, and program of the present invention. As depicted, a caller has selected "group 2" from the phone list database and the "listen only" channel at caller

telephone **802**. Channel allocation controller **204** receives the request and allocates a separate

listen only channel to each of remote location telephones **806, 808,** and **810**, as illustrated as

reference numeral **812**. In the example, each of remote location telephones **806, 808,** and **810** are

accessible via the same telephone number. Thus, a parent may call "group 2" which includes the

5   group of remote telephones within the home and listen to all of the phones at the same time, still

using minimized resources by only requesting a "listen only" channel.

[0062]   Referring now to **Figure 9**, there is illustrated a high level logic flowchart of a

process and program for controlling a caller telephone in accordance with the method, system,

10   and program of the present invention. As depicted, the process starts at block **900** and thereafter

proceeds to block **902**. Block **902** illustrates a determination whether the push to listen button is

selected. If the push to listen button is selected, then the process passes to block **904**. Block **904**

depicts requesting a call for listening only. The telephone number may be one entered by the

user or selected from a phone list database. Next, block **907** depicts a determination whether the

15   call connected. If the call is not connected, then the process ends. If the call connected, then the

process passes to block **908**. Block **908** illustrates controlling output of the audio stream

received from the listening channel to a speaker or other audio output device. Next, block **909**

depicts a determination whether the push to listen button remains selected. If the push to listen

button does not remain selected, then the process passes to block **910**. If the push to listen button

20   remains selected, then the process returns to block **908**.

[0063]   Alternatively, at block **902**, if the push to listen button is not selected, then the

process passes to block **912**. Block **912** depicts a determination whether there is a listen only

selection from the phone list database. If there is not a listen only selection from the phone list

database, then the process returns to block **902**. If there is a listen only selection from the phone

list database, then the process passes to block **914**. Block **914** illustrates a determination whether

5   a group selection is made from the phone list database. If a group selection is made, then the

process passes to block **916**. Block **916** depicts requesting a listen only group call with the group

specification, and the process passes to block **920**. The group specification includes the

telephone numbers of the group members and the type of channel allocation. Alternatively, at

block **914**, if a group selection is not made, then the process passes to block **918**. Block **918**

10   depicts requesting a listen only call for the selected number, and the process passes to block **920**.

Block **920** depicts controlling output of the audio stream received from the listening channel to a

speaker or other audio output device. Next, block **922** illustrates a determination whether a call

end button is selected. If a call end button is not selected, then the process passes to block **920**.

If the call end button is selected, then the process passes to block **910**. Block **910** depicts

15   requesting that the telephone network release the listening channel, and the process ends.

[0064]   With reference now to Figure 10, there is illustrated a high level logic flowchart

of a process and program for controlling a telephone network enabled to handle listen only calls.

As depicted, the process starts at block **1000** and thereafter proceeds to block **1002**. Block **1002**

20   depicts a determination whether a listen only call request is received. If a listen only call request

is not received, then the process iterates at block **1002**. If a listen only call request is received,

then the process passes to block **1004**. Block **1004** illustrates a determination whether a group

request is received. If a group request is not received, then the process passes to block **1006**. If a

group request is received, then the process passes to block **1020**.

[0065]   Block **1006** depicts allocating a listen only half duplex channel with the remote

5   location telephone. Next, block **1008** illustrates sending a listen request with the caller identifier

to each remote location telephone. Thereafter, block **1010** depicts a determination whether the

remote location telephone accepted the listening request. Where there is a group of remote

location telephones called, a determination is made whether each location accepts the listening

request. If the listening request is not accepted, then the process passes to block **1012**. Block

10   **1012** illustrates returning a call error message to the requesting location, and the process ends.

Alternatively, if the remote location telephone accepts the listen request, then the process passes

to block **1014**. If the request to release the listening channel is received, then the process passes

to block **1016**. Block **1016** depicts deallocating the listen only channel, and the process ends. In

additional to deallocating the listen only channel, the microphone at the remote location

15   telephony device may be deactivated. Alternatively, at block **1014**, if a request to release the

listening channel is not received, then the process iterates at block **1014**.

[0066]   Block **1020** depicts a determination whether the group request is for a rotating

group channel. If the group request is not for a rotating group, then the process passes to block

1022. Block **1022** illustrates allocating a listen only half duplex channel with each remote

20   location telephone, and the process passes to block **1008**. Alternatively, at block **1020**, if the

group request is for a rotating group, then the process passes to block **1024**.

[0067]   Block 1024 depicts allocating a listen only half duplex channel with the first remote telephone location. Next, block 1026 illustrates sending the listen request with a caller identifier to the first remote location telephone in the group. Thereafter, block 1028 depicts a determination whether the remote location accepts the listen request. If the remote location does not accept the listen request, then the process passes to block 1036. Block 1036 illustrates sending the listen request with a caller identifier to the next remote location, and the process passes to block 1028.

[0068]   Alternatively, at block 1028, if the remote location accepts the listen request, then the process passes to block 1030. Block 1030 depicts a determination whether the time expired for the current location. If the time has not expired, then the process passes to block 1032. If the time has expired, then the process passes to block 1036. Although not depicted, the process may include a step requiring a signal to activate a push to listen alert. In particular, for group listening, the first request of a listen only channel may alert the callee of the listening event. Then, subsequent requests, within a selected time value, as when rotating requests to a group of listeners, may optionally alert each callee of the listen only call. The time value may be selected, for example, by taking the number of listeners in the group times the expiration time value. If a subsequent request to listen is delayed beyond the calculated time value, then may be treated as a first push to listen request, and the push to listen alert process is initiated.

[0069]   Block 1032 illustrates a determination whether a request to release the listening channel is received from the caller. If the request to release is not received, then the process passes to block 1030. If the request to release is received, then the process passes to block 1034.

Block **1034** depicts deallocating the listen only channel, and the process ends. In addition, the

microphone at the remote location telephony device may be deactivated.

[0070]   Referring now to **Figure 11**, there is depicted a high level logic flowchart of a

5   process and program for controlling a remote location telephone. As depicted, the process starts

at block **1100** and thereafter proceeds to block **1102**. Block **1102** illustrates a determination

whether a listen request and identifier for a listening party are received. If a listen request and

identifier are not received, the process iterates at block **1102**. If a listen request and identifier are

received, then the process passes to block **1120**.

10   [0071]   Block **1120** depicts a determination whether the caller requests callee

authorization. When initiating a listen only call, a caller may request that the callee specifically

authorize the listen only call. If the caller does not request callee authorization, then the process

passes to block **1104**. Block **1104** depicts comparing the identifier of the caller with the

authorized listener database. Next, block **1106** illustrates a determination whether the caller

15   identifier matches an entry in the authorized listener database. If the caller identifier does not

match an entry in the authorized listener database, then the process passes to block **1108**. Block

1108 depicts denying the listen request, and the process ends. Alternatively, at block **1106**, if the

caller identifier matches an entry in the authorized listener database, then the process passes to

block **1110**. Block **1110** illustrates accepting the listen request. Next, block **1112** depicts

20   activating the microphone from the listen request. Thereafter, block **1114** depicts activating the

listen only indicator, and the process ends.

[0072]   Alternatively at block **1120**, if the caller requests callee authorization, then the

process passes to block **1122**. Block **1122** depicts prompting the callee to authorize the listen

only call. Next, block **1124** illustrates a determination whether the callee authorizes the listen

only call. If the callee authorizes the listen only call, then the process passes to block **1110**. If

5   the callee does not authorize the listen only call, then the process passes to block **1108**.

[0073]   With reference now to **Figure 12**, there is illustrated a high level logic flowchart

of a process and program for initiating a callee listen only call in accordance with the method,

system, and program of the present invention. As depicted, the process starts in the caller

10   telephony system at block **1200** and thereafter proceeds to block **1230**. Block **1230** illustrates a

determination whether the caller initiates a request for the callee to listen only to the caller. If the

caller does not initiate the callee to listen only to the caller, then the process iterates at block

1230. If the caller initiates the call, then the process passes to block **1232**. Block **1232** depicts

requesting the callee to listen only to the caller. Next, block **1234** illustrates a determination of

15   whether the call connected. If the call does not connect, then the process ends. If the call

connects, then the process passes to block **1236**. Block **1236** depicts activating the microphone

on the listening only channel opened for the callee to listen only to the caller. Next, block **1238**

illustrates a determination whether the callee continues to activate the listen only call. If the

callee continues to activate, then the process returns to block **1236**. If the callee does not

20   continue to activate, then the process passes to block **1240**. Block **1240** depicts requesting to

release the listening channel, and the process ends.

[0074]   Referring now to **Figure 13**, there is depicted a high level logic flowchart of a

process and program a telephone network for controlling a listen only call where a callee listens

only to a caller who initiates the listen only call in accordance with the method, system, and

5   program of the present invention. As illustrated, the process starts in the telephone network

controller at block **1300** and thereafter proceeds to block **1302**. Block **1302** depicts a

determination whether a request is received from a caller to request the callee to listen only to the

caller. If the request is not received, then the process iterates at block **1302**. If the request is

received, then the process passes to block **1304**. Block **1304** illustrates activating the ring request

10   for the callee to listen only to the caller. Thereafter, block **1306** depicts a determination whether

the callee has authorized the listen only call. If the callee does not authorize the listen only call,

then an error message is returned to the call, as depicted at block **1310,** and the process ends. If

the callee does authorize the listen only call, then the process passes to block **1308**. Block **1308**

illustrates allocating a listen only half duplex channel from the remote location telephone to the

15   caller location. Next, block **1310** depicts a determination whether a request from the caller or

callee to release the listening channel is received. If a request is not received, then the process

iterates at block **1312**. If a request is received, then the process passes to block **1314**. Block

1314 illustrates deallocating the listen only channel, and the process ends.

20   [0075]   While the invention has been particularly shown and described with reference to

a preferred embodiment, it will be understood by those skilled in the art that various changes in

form and detail may be made therein without departing from the spirit and scope of the invention.